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THE PLACE OF THE INTERSTATE RAILROAD IN REDUCING FOOD DISTRIBUTION COSTS

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More than in any other country, the freight rate system of the United States has been built up on the theory of minimizing the consideration of distance. The phrase "what the traffic will bear" has had to accept great abuse, so few realizing that the freight rate is not "all that the traffic will bear" but what will make the traffic move.

What freight rate will enable the oranges of California to compete in New York markets with those of Florida, two thousand miles nearer? How can the peaches of Georgia, the celery of Michigan, the beef from Chicago, be made to move freely to every market where such articles are consumed, so efficiently that they will be there when needed, so cheaply that practically all markets will be upon a price parity, and the producers will obtain an adequate return for their effort?

Man must not only be fed—he must be warmed, and mills must run. Shall the coal for the furnaces and the mills be charged the same freight rate as the cantaloupes for the table? If so, few could afford to buy coal, little coal would be transported, and the cantaloupes would have to pay even more. What the railroad traffic manager has had to do, therefore, has been to build up, step by step, meeting conditions as they arose, a scheme of freight rates which would enable the railroad to pay its expenses and a reasonable return upon the capital invested, out of an average freight rate, adjusted in such manner that the burden would bear where it would be least felt.

The commercial fabric of this country has been built up on this theory. Our railroads have been pioneers—heralds of civilization. The tremendous distances, the diversity of products, the wide separation of markets, have resulted in the development of a system of freight rates which, with all of its shortcomings, is the wonder of the economic world. To express the American railroad situation in a nutshell: American railways do their work upon less capital per mile; they

do more work per unit of capital; they pay their labor better; they pay more to the support of the government in proportion to the capital invested; and they do their work cheaper than is done in any other country in the world.

These preliminary observations are not intended as a gratuitous panegyric upon our railroads, but are a necessary basis for discussing the very practical problem indicated in the title of this article. For it must be understood at the very outset that it is the obligation of a carrier to supply transportation for every product that enters into commerce, at the same time providing safe and expeditious movement for passengers. The distribution of food, therefore, is but part of that greater problem of distribution in general, which is indeed the problem of our age. It is essential, in considering the part the railroad plays in food distribution, that it be understood how far the railroads of the country have already gone in the solution of the broader problem.

It is essential, too, that we realize some of the limitations that surround the carrier in the performance of his task. His business is solely to furnish transportation. He cannot act as banker, supplying money on goods to the shipper, while they are in transit. He cannot act as market agent, assuming responsibility for obtaining satisfactory prices in the best markets. He cannot supply a warehouse for storing goods while they await a purchaser. Nor can he grant special privileges to favored shippers, or communities. All must be treated alike, and the railroad cannot, under the law, interest itself in the reduction of food costs any more than in the reduction of the cost of iron ore or wood pulp. Circumscribed by such limitations, the railway manager, appreciating the vital importance of the distribution of food, has addressed himself to this problem with astonishing success.

The districts surrounding our large cities do not produce enough fruit or vegetables to supply their own needs, and were it not for fast freight trains, only the rich could afford to buy the season's perishable delicacies in the cities. Families in the North which formerly had to do without vegetables until late spring or summer can now afford new potatoes and peas brought from the South in February, and all on account of the facilities for rapid hauling and the low freight rates.

Necessity for quick transportation grows out of the fact that many commodities decrease in value very rapidly when in transit. A carload of strawberries loses from \$5 to \$10 per hour, according

to the time it has been under way. Live stock lose about \$3 per hour. But such has been the development of the "fast freight" movement that during the peach season, train loads of peach cars will move from Fort Valley, Ga., through to New York in two days. The peaches are picked when nearly ripe, loaded without delay into refrigerator cars, hurried through to market. When the peaches leave Georgia their destination is unknown, except as to general district. When they reach Washington, however, so complete and timely is the system of information which has been built up, that the shippers have learned by telegraph where the demand is greatest and the supply the least, and they have ordered the railroad to divert the car to where it is useful.

At stated times the commodity trains, the cattle trains, and the fruit and vegetable trains leave certain points, and at stated times they arrive at their several destinations. A merchant in Chicago can order half a carload of merchandise from New York on Monday, by telegraph, and receive the consignment Thursday morning. A train of berries leaves Richmond or Cape Charles, Va., at half past two o'clock in the morning and is in New York the same evening. Cattle are carried through from Pittsburgh to the docks in Philadelphia in less than twenty-four hours. The railroads carry coal, iron and similar staple products by slow freight, moving the cars as a sufficient quantity accumulates to make up full train loads. But perishable freight moves on regular schedules at passenger train speed. On the road, arrangements are made for the passage of trains filled with such commodities with just as much regularity as for that of passenger trains. And the goods are met by consignees at the destination in many cases just as a passenger is met by friend or relative at his journey's end.

Vegetables and fruit must be transported in the quickest possible time, to be kept fresh and in eatable condition, and the market should not be glutted, for the goods will not keep, and, even if they would, an oversupply means an inadequate return to the farmer or the commission merchant. These factors, applied to the enormous areas, multiplicity of communities, and complex requirements of the country, constitute a problem of extraordinary magnitude.

Having long ago surpassed Europe in the economy and dispatch with which heavy or "slow" freight is moved, American railroads are seeking to approach that degree of success in the handling of commodities which is seen in England. British achievement in this

direction has been made feasible by the density of population and the short distances the goods have to be hauled; the system there is similar to the express service in this country. Here the great areas, the long distances and the scattered population have put obstacles in the way of attaining much that the public and the carriers desire in the collection and delivery of commodities.

Speed in the delivery of their goods means saving of money to merchants, and it is they and their customers whom good and prompt service benefits. The quicker he can get what he needs, the smaller the quantity of goods the merchant must keep on hand. The benefit which comes to him through not being compelled to take the risk of laying in a large stock is transferred to the consumer in the form of lower prices. It is thus in the perfection of service that the carrier can render its greatest service in the solution of the problem of lower food costs. The freight rate on any individual shipment will always be small. It must be small enough to make it worth while for the shipper to forward his product, and in practice it works out that the freight rate is but a very small factor in the selling price of the ordinary commodity. Some typical rates from Florida points will illustrate this thought:

FREIGHT RATES TO NEW YORK

	TRANSPOR- TATION	REFRIGERA- TION
<i>Strawberries</i>		
From Starke, Fla., per crate of 32 quarts.....	\$1.30	\$0.50
<i>Oranges</i>		{ \$50 per car of 300 crates min- imum
From Lakeland, Fla., per crate of 80 lbs.....	.63	
<i>Potatoes</i>		
From Hastings, Fla., per barrel of 185 lbs.....	.83	
<i>Tomatoes</i>		
From Fort Lauderdale, Fla.....		
per crate of 50 lbs.....	.59	.18½
in ventilated cars.....	.51	
<i>Celery</i>		
From Sanford, Fla., per crate of 50 lbs.....	.50	.18½
in ventilated cars.....	.43	
<i>Lettuce</i>		
From Bordentown, Fla., per basket of 50 lbs.....	.54	.18½
in ventilated cars.....	.46½	

The first shipment of early vegetables for market was made by boat from Norfolk in 1855. Last year the Pennsylvania Railroad alone hauled nearly 100,000 cars of truck products from the South, largely berries, melons, potatoes and peaches.

Modern methods of packing and refrigerating have combined with improved track and rolling stock to effect the transportation of fruits and vegetables from the South to northern markets with the utmost possible speed. With the exception of live stock, for the transportation of which Congress has made special rules, early vegetables take precedence over all other preference freight.

To meet the demands of this traffic it is necessary for the railroads to keep closely in touch with the producing country, to know just what the agricultural conditions are and how fortunate one section has been in comparison with another. Several months before the seasonable movement begins, a representative of a railroad will make a tour in the producing region to make estimates and get opinions of shippers, station agents and others, of the probable size of shipments. Later, about a month before any particular commodity begins to move, another trip is made to confirm earlier estimates. Besides this, station agents make reports in advance, and when the movement begins they make daily reports. In this way it is possible to get fairly accurate figures upon which to form judgment of the amount of equipment needed to move the output. It has been found that the boundary of the producing territory moves north in the spring at an average rate of fifteen miles a day. Green vegetables begin to come from Florida at first in January. A little later Georgia and Alabama are the center of trucking activity. Far along in the summer, Maine and Canada have their turn in sending products to the great consuming districts.

With this continuous and rapid change in the position of the chief source of supply, complications in the railroad's part of the work are inevitable. Ventilated and refrigerator cars must be on hand for warm weather, but in the cold months these same refrigerator cars are turned into warming cars to keep vegetables from freezing. Along the line in the warm weather re-icing has to be done without loss of time. In winter, at places like New York, heated, enclosed, unloading quarters are supplied to insure against injury from the cold.

One of the causes of the remarkable growth in perishable freight brought from the South is the extension to small communities of the

advantages formerly enjoyed only by the larger cities. Formerly, fruits or vegetables were consigned direct to New York or to Philadelphia, and dealers in neighboring towns had to pay extra freight or expressage to get them to the smaller place. That made prices high beyond the reach of a family of moderate means.

Now certain zones have been created, with the larger cities as centers of distribution. For example, a town within 50 or 100 miles of New York, Philadelphia or Baltimore gets the benefit of the same freight rate that applies from the producing point to the city. This reform has extended the area of consumption and caused the traffic figures to leap upward. The Pennsylvania Railroad, for example, carried more than double the quantity of perishable freight from the South in 1913 that it carried in 1901.

The vast volume of fruits and vegetables which move where they may be most quickly disposed of are supplemented by that even larger quantity of products, including bread, groceries, meats, etc., which, while not so perishable, must receive preferential freight movement. In this latter category we include all less-than-carload freight and all articles in the first, second and third, and some commodities in even lower classes of the Official Classification. Nearly everything which one sees in a food-shop comes within the meaning of preference freight.

The pioneer fast freight organization in America was the Star Union Line, which grew out of the business established seventy-four years ago by Leech and Company, of Philadelphia, and Clark and Company, of Pittsburgh. In 1863 it was organized as an independent freight line, operating over a number of different railroads between the Atlantic coast and the Mississippi River. Ten years later the Pennsylvania Railroad Company purchased the Union Line and made it a bureau of the Pennsylvania Railroad system.

In the manner of handling, preference freight constitutes a separate class of traffic, as different from bulk freight as it is from passenger traffic. The equipment is carefully selected and preference trains have track rights not enjoyed by trains carrying coal, lumber or stone. All the cars, for example, must have air brakes. The fast freight trains running on schedule are restricted to thirty cars to a train. Each one of the cars bears a "sticker" with the word "preference" upon it. There is a rule that the "stickers" must not be detached en route, but be filed with car waybills. The purpose of the

"stickers" is to make doubly sure that the cars are despatched from their starting points in the proper trains, and reach their destination promptly.

On the westbound schedule of one fast freight line there are eleven trains which leave eastern points daily just as regularly as do the passenger trains; and eastbound there is only one train less. This does not represent the total volume of traffic, however, for only the last sections are scheduled, and advance sections are required so frequently that they are rather the rule than the exception during certain seasons. Freight must be kept moving, so a train is sent out an hour after the regular starting time if there is a large enough accumulation to warrant it.

Freight from New York, Philadelphia, Baltimore and places similarly located is delivered in from one to three days, according to the zone for which it is destined. In the zone which is one day from New York are Harrisburg, Lancaster, Williamsport, Baltimore, Norfolk, Washington, etc. Cities like Pittsburgh, Cleveland, Wheeling, Erie and Buffalo are reached the second day after shipment, while Chicago, St. Louis, Peoria, Columbus, Dayton and Cincinnati are in the three-day district. From other shipping points in either the east or west an equally rapid service is given, the zones being divided according to the distance. Trains which are run on schedules representing last sections only require advance sections to be kept well ahead of regular schedules so that congestion and delay may be avoided. On the best equipped and best managed roads the long-distance preference trains move at an average speed, including stops, of twenty miles an hour, which is as fast as passenger trains run in some parts of the country.

In the case of perishable freight, schedules have to be arranged primarily with reference to the time of arrival at destination. An early morning delivery is essential, for that is the hour of wholesale marketing in cities, and if a perishable consignment arrives three or four hours late it means a loss of not three or four, but of twenty-four hours, as far as marketing the material is concerned.

Generally speaking, there are two methods of handling preference freight. By one the car is treated as a unit. Less-than-carload shipments, irrespective of destination, are packed in the smallest possible number of cars at the start, and are later transferred and reloaded at some transfer point. By the second method, which is

followed quite extensively, the train is treated as a unit. Shipments for one place are put into one car. When possible, a solid train runs straight to its destination from the place where the cars are loaded.

Owing to the fact that small lots of freight originate at widely separated points, billed for an equally scattered number of places, it would be impracticable to allot a separate car to each point and carry it through to destination. To obviate this difficulty, transfer yards have been created, and they have been very instrumental in the development of the fast freight service. All trains are broken up at such points and the goods re-assorted. In this way all the freight for a certain section, or a certain city, no matter what the points of origin, is collected and placed in cars destined for that territory. The changes are made with remarkable swiftness and the attendant delay is inconsiderable.

A very important fact, and illustrative of the intricacy of railway working, is that in all these movements of freight, any car can be located at a very short notice. The shipper can thus be advised as to the progress of his consignment, and the consignee can be in readiness to receive and market the shipment without delay. This elimination of friction and loss through making commercial operations more stable is a very real factor in preventing economic waste.

While the chief function, and the only duty, of a railway company is to provide transportation, many railways have in the effort to increase traffic on their lines, gone out of their way to encourage improved farming methods, to increase the output of food, and thus indirectly to affect food costs.

The Long Island Railroad proved by means of experimental farms that the worst ten acres on the island could be cultivated at a good profit. The Pennsylvania Railroad has done the same thing with an experimental station at Bacon, Del. In the fall of 1908, James McCrea, the late president of the Pennsylvania Railroad, made a trip of three days over the railroad lines on the Delaware Maryland-Virginia peninsula. He saw thousands of acres of this section—one of the richest agricultural districts in the world—lying idle, with the adjoining farms flourishing, and the products of the latter in great demand in all of the large markets of the Middle and Eastern States. Having knowledge of the success attained by the Long Island Railroad with its two experimental farms, Mr. McCrea established this practical demonstration farm, where the railroad could show the

agricultural possibilities of the land on the peninsula. The land purchased at Bacon had not been farmed for over five years. It had been robbed of its fertility several years earlier, and, considering it worthless, its owners let it grow up in sassafras, sweet briar and weeds. It was in this condition when the railroad company's expert took charge. By a small application of stable manure, about fifteen tons per acre, and 500 pounds of lime, 47 bushels of corn per acre were raised on this land the first year.

When the Long Island Railroad established a demonstration farm many scoffed at the idea, and termed those interested in the enterprise "book farmers." They said it was impossible to grow anything on the waste land chosen for the experiment, that it was good for nothing but "pine barrens," and "salt ponds." The scoffing changed to admiration when in two years the Long Island people had succeeded in growing successfully 380 different varieties of plants, including cauliflower, corn, radishes, peas, asparagus, tomatoes, cabbage, carrots, beans, cantaloupes, watermelons, alfalfa, potatoes, and many other vegetables and fruits. Many railroads have for several years been exerting every effort to encourage the agricultural interests along their lines. On farmers "special instructions trains" and steamboats, operated by the railroad, lectures have been delivered before thousands of farmers by experts from agricultural colleges of different states. In addition, some railroads have carried on a campaign to acquaint the buyers and growers of different markets with those of the territory tributary to their lines. Booklets have been issued, and the traffic representatives of the companies have thus been instrumental in greatly increasing the demand for produce.

Added interest in scientific farming is one result of such an agricultural campaign. A wider market for the crops grown on a railroad line is another, with more people living along its lines, greater prosperity among the farmers, and—for the railroad itself—an increased freight and passenger traffic.

The problem of food distribution is still developing. Any reductions in the cost of transportation must in the immediate future develop out of more economical methods of packing, handling and marketing. The railroad transportation cost can hardly decline, so long as the costs of railroad operation continue to increase. The gains must really be derived from removal of economic waste. Relying upon more perfect information and education, producers must adjust their output more accurately in accordance with the demand.

The railroad can and should assist with every means in its power, in securing the shipment of all products to just where they can be consumed. More accurate adaptation of the transportation service to true market conditions, the spread of information as to markets, purchasers, and sellers, and the elimination of unnecessary stages and stoppages in the movement of goods from the producer to the ultimate consumer, should embrace those lines of experiment and study along which future development will doubtless proceed.